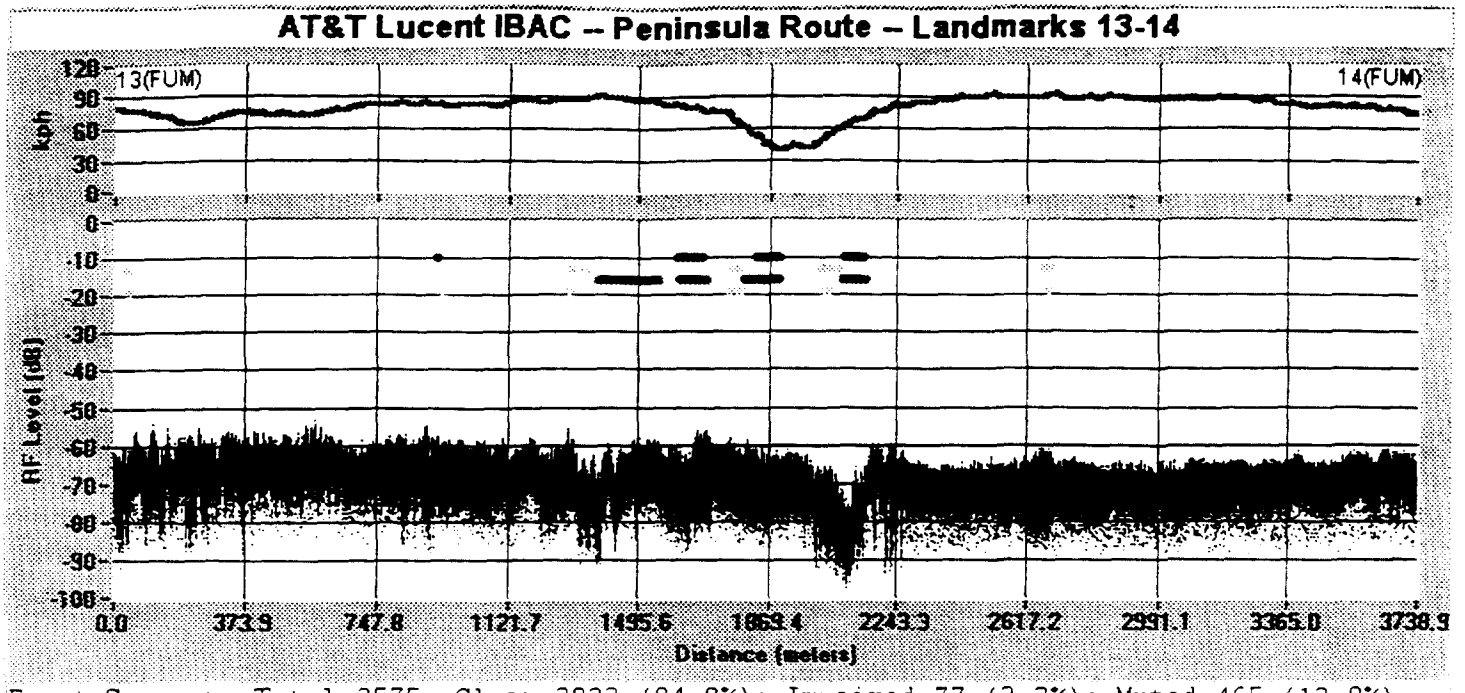
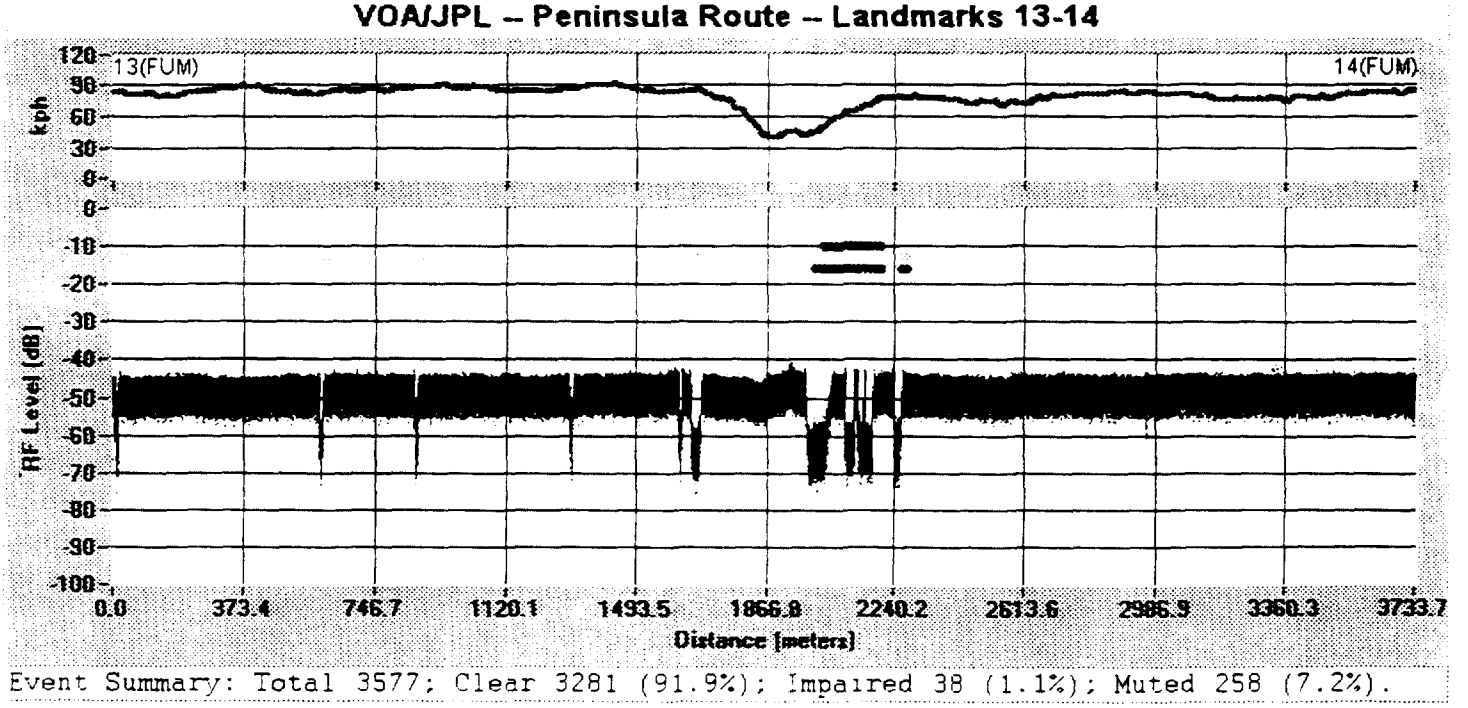
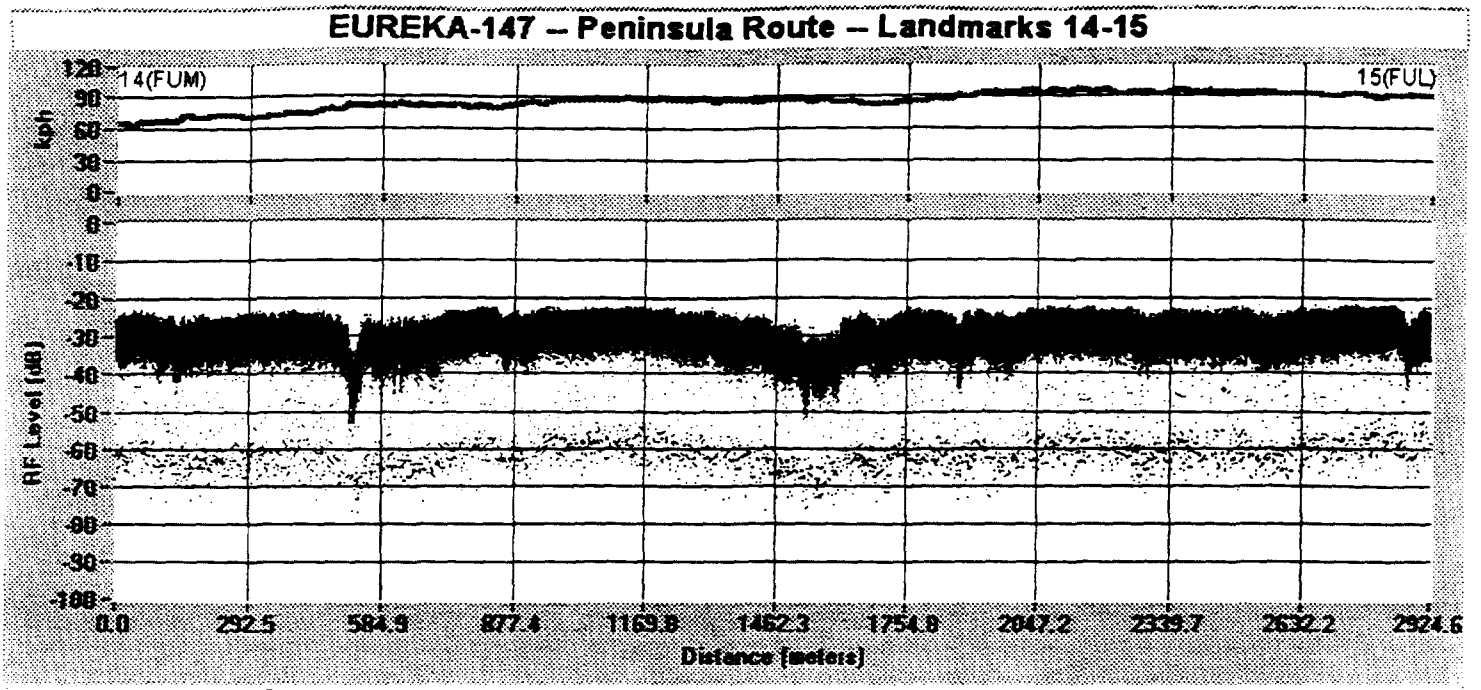


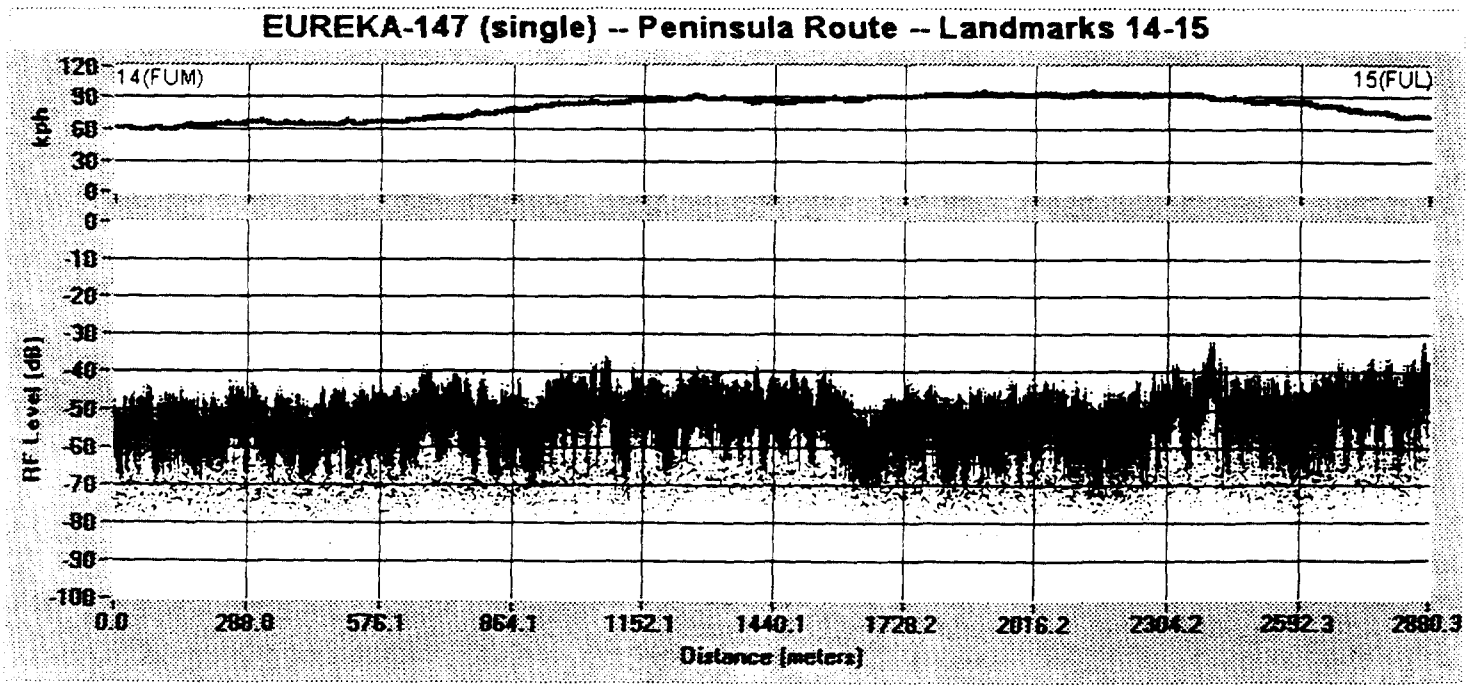
Event Summary: Total 3575; Clear 3033 (84.8%); Impaired 77 (2.2%); Muted 465 (13.0%).



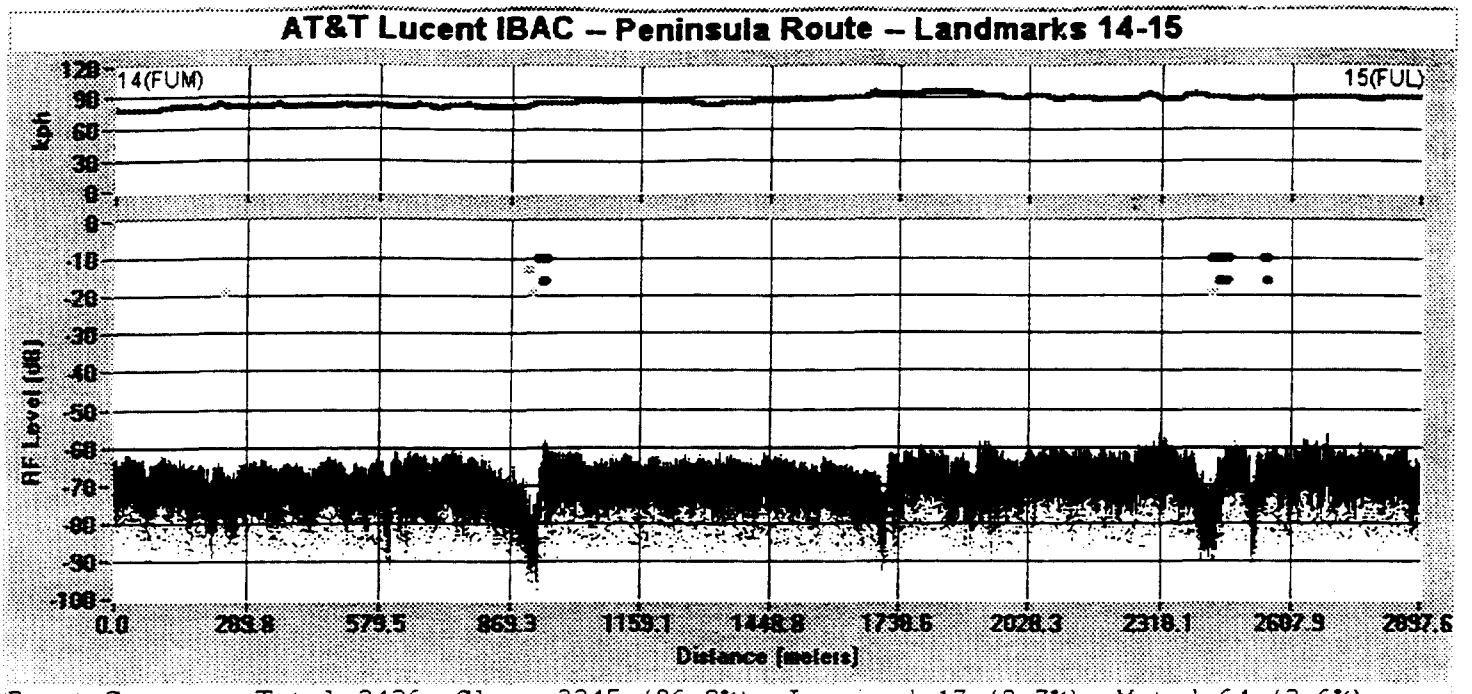
Event Summary: Total 3577; Clear 3281 (91.9%); Impaired 38 (1.1%); Muted 258 (7.2%).



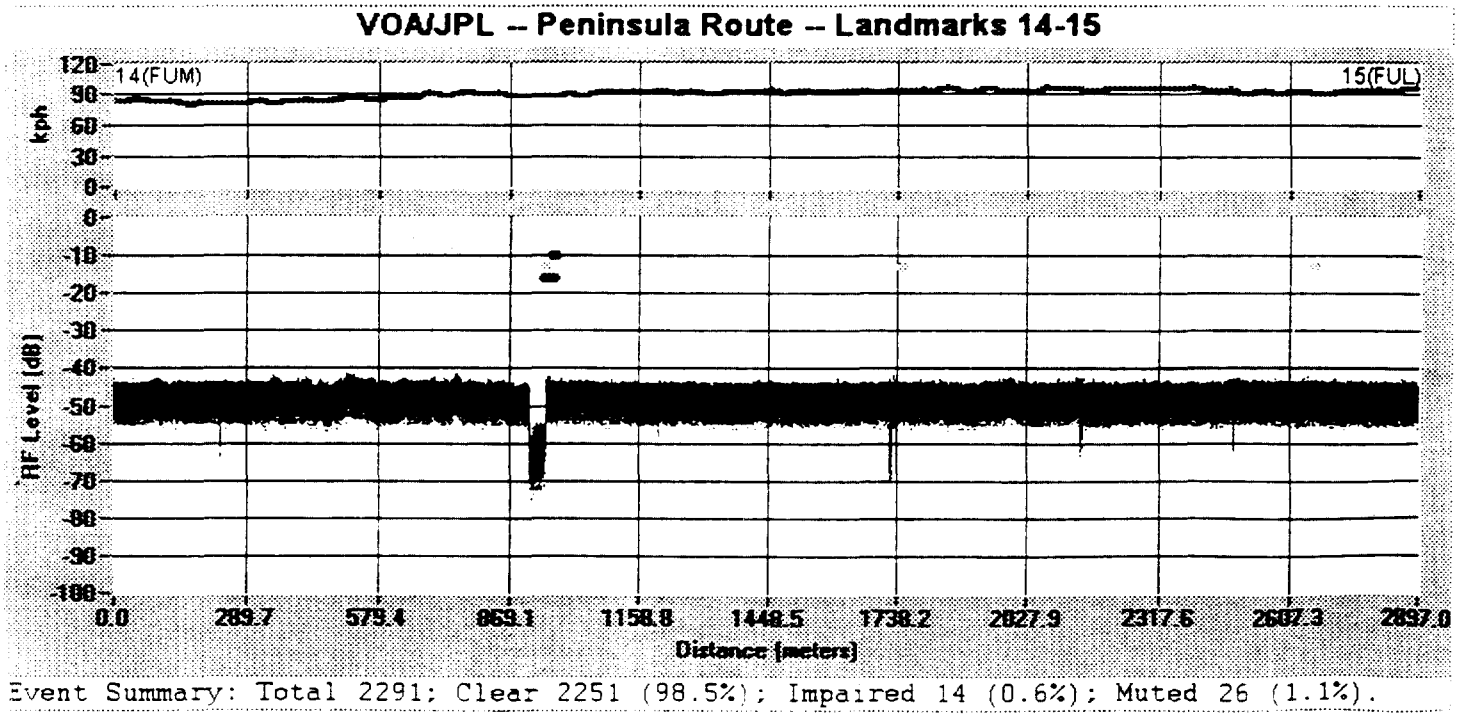
Event Summary: Total 2484; Clear 2484 (100.0%); Impaired 0 (0.0%); Muted 0 (0.0%).



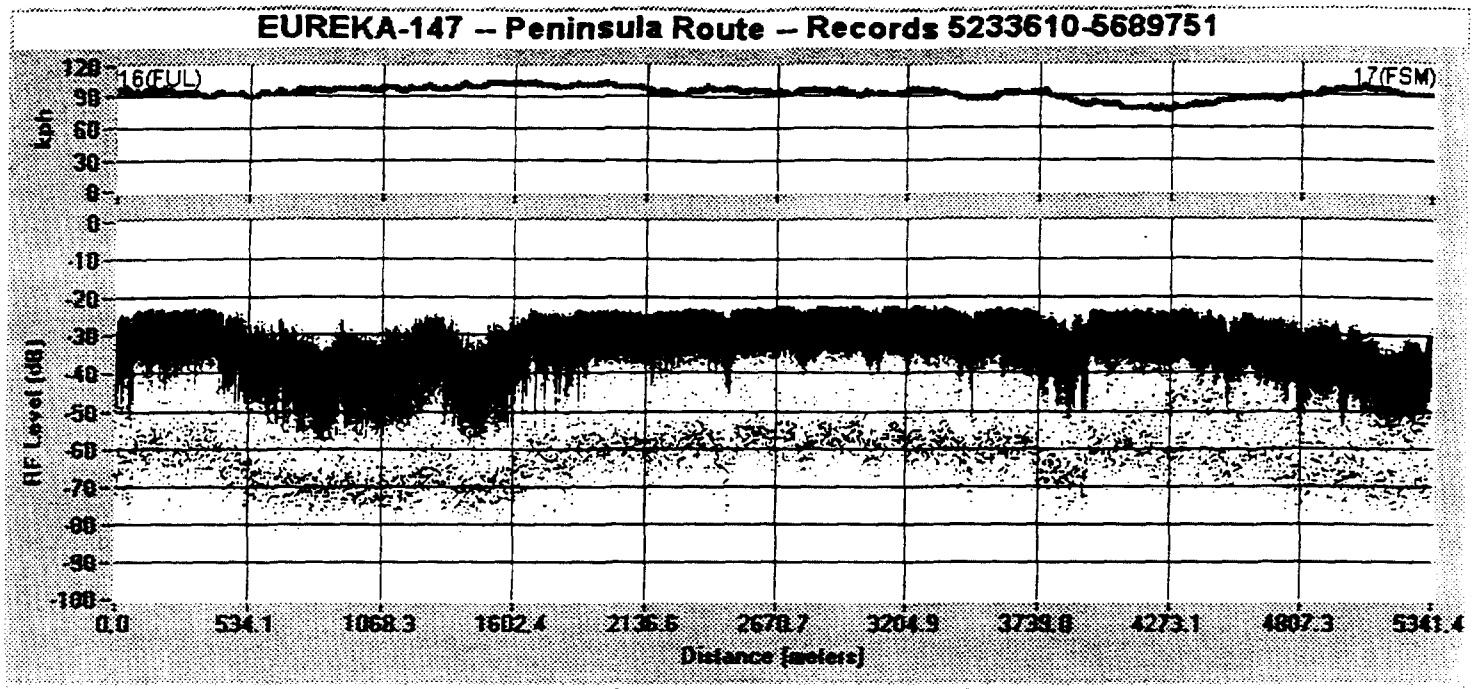
Event Summary: Total 2638; Clear 2638 (100.0%); Impaired 0 (0.0%); Muted 0 (0.0%).



Event Summary: Total 2426; Clear 2345 (96.8%); Impaired 17 (0.7%); Muted 64 (2.6%).

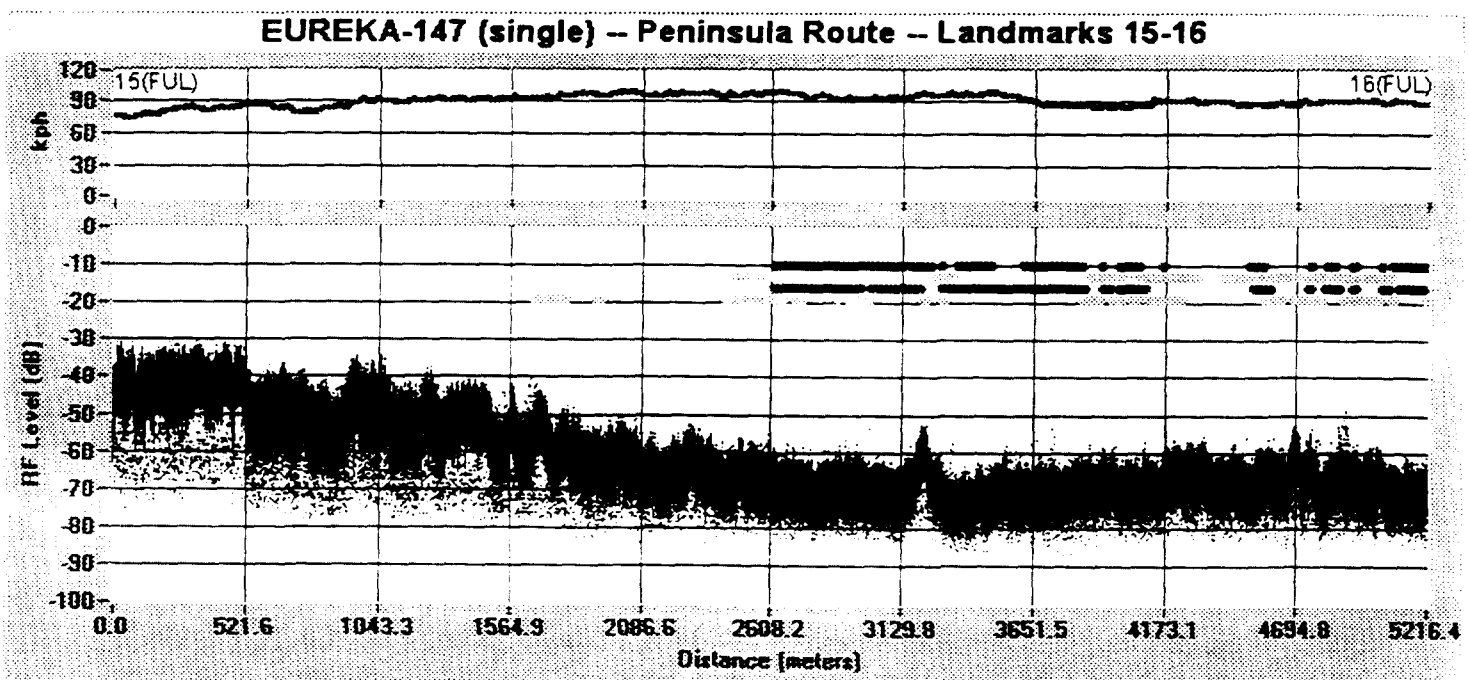


Event Summary: Total 2291; Clear 2251 (98.5%); Impaired 14 (0.6%); Muted 26 (1.1%).

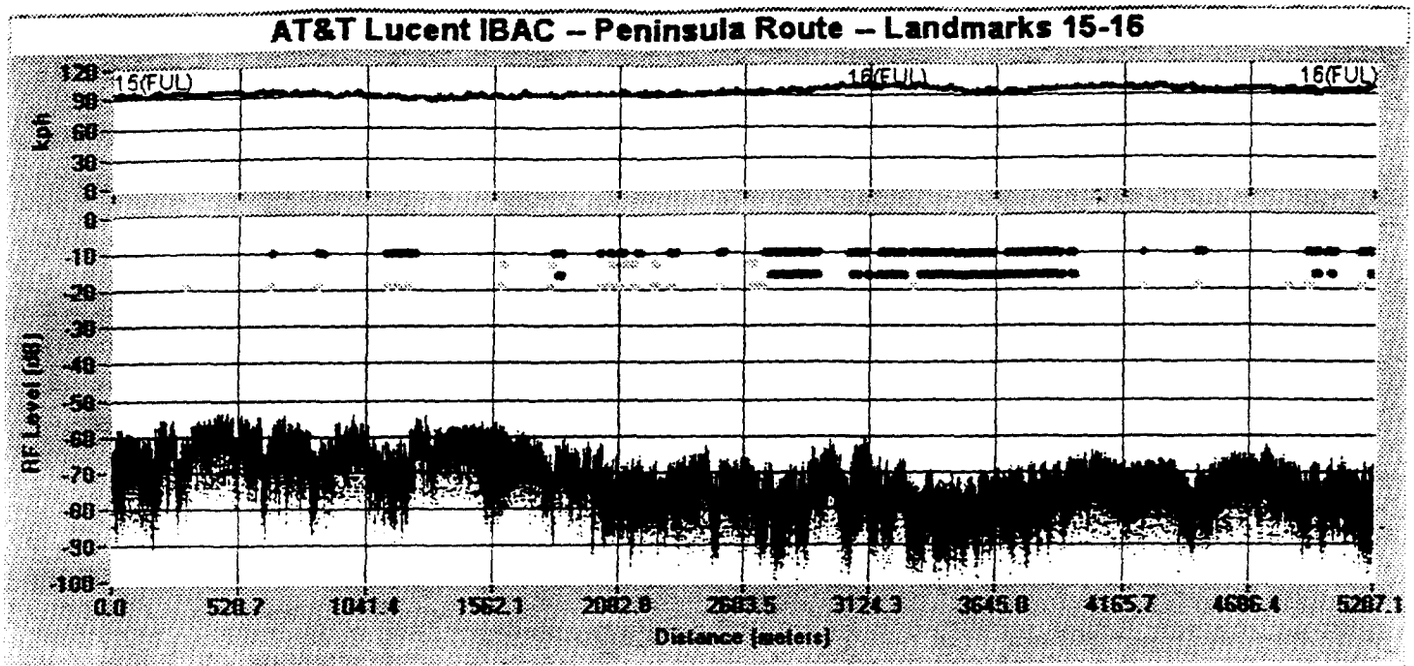


Event Summary: Total 4055; Clear 4055 (100.0%); Impaired 0 (0.0%); Muted 0 (0.0%).

NOTE #1 & #6

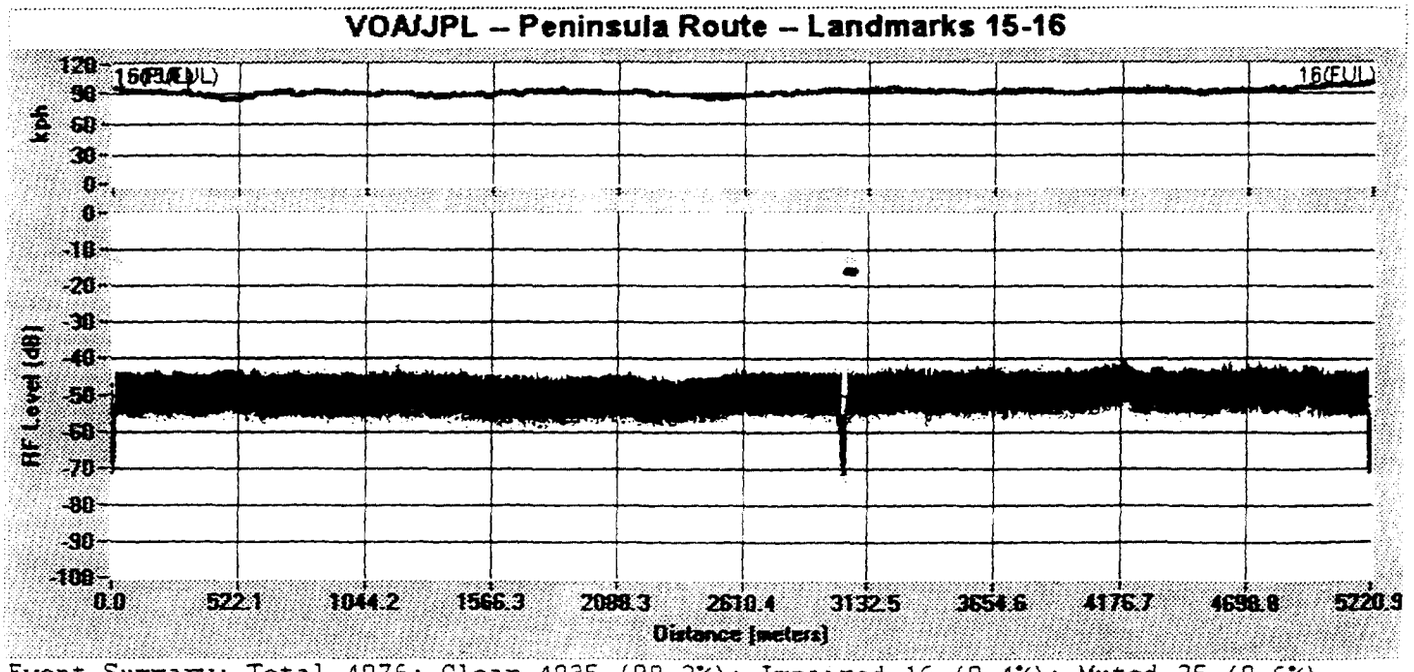


Event Summary: Total 4309; Clear 1922 (47.4%); Impaired 1138 (28.1%); Muted 1249



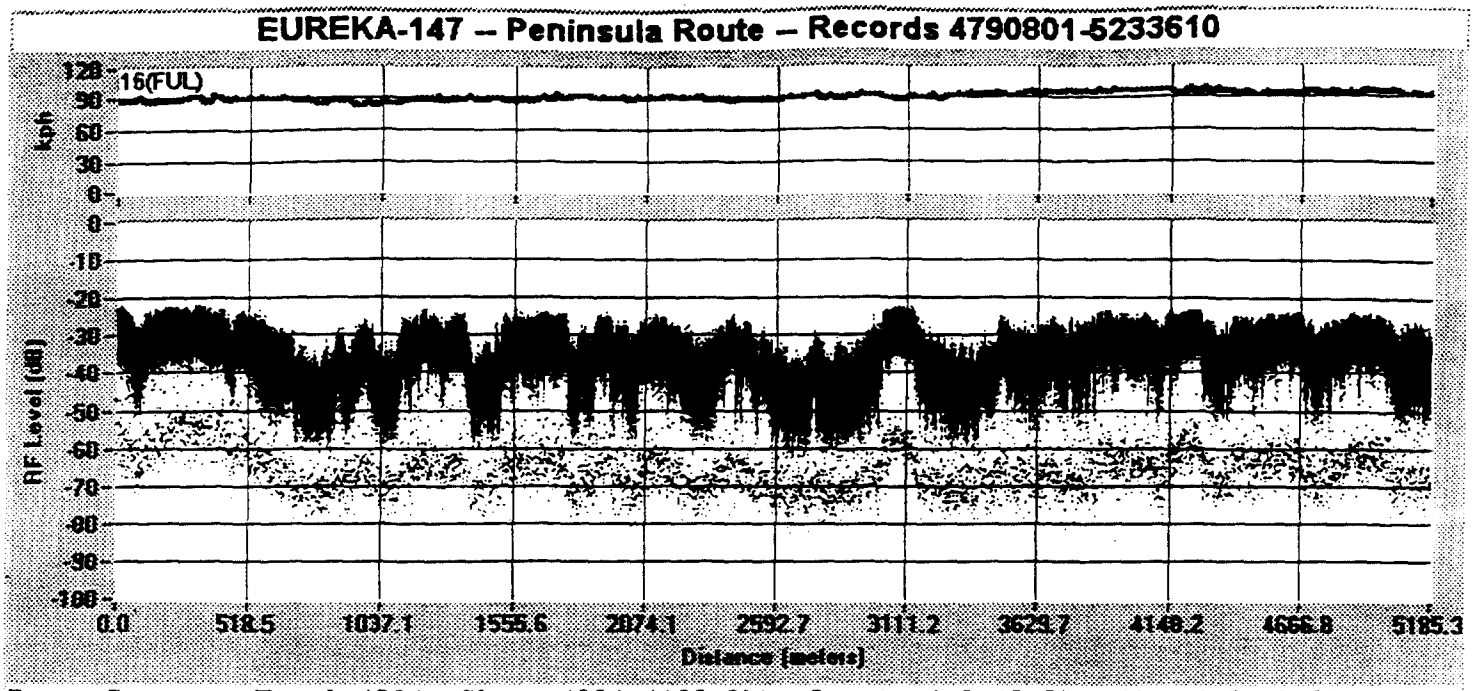
Event Summary: Total 3946; Clear 2763 (71.0%); Impaired 134 (3.4%); Muted 1049 (26.9%).

NOTE #2 & #6



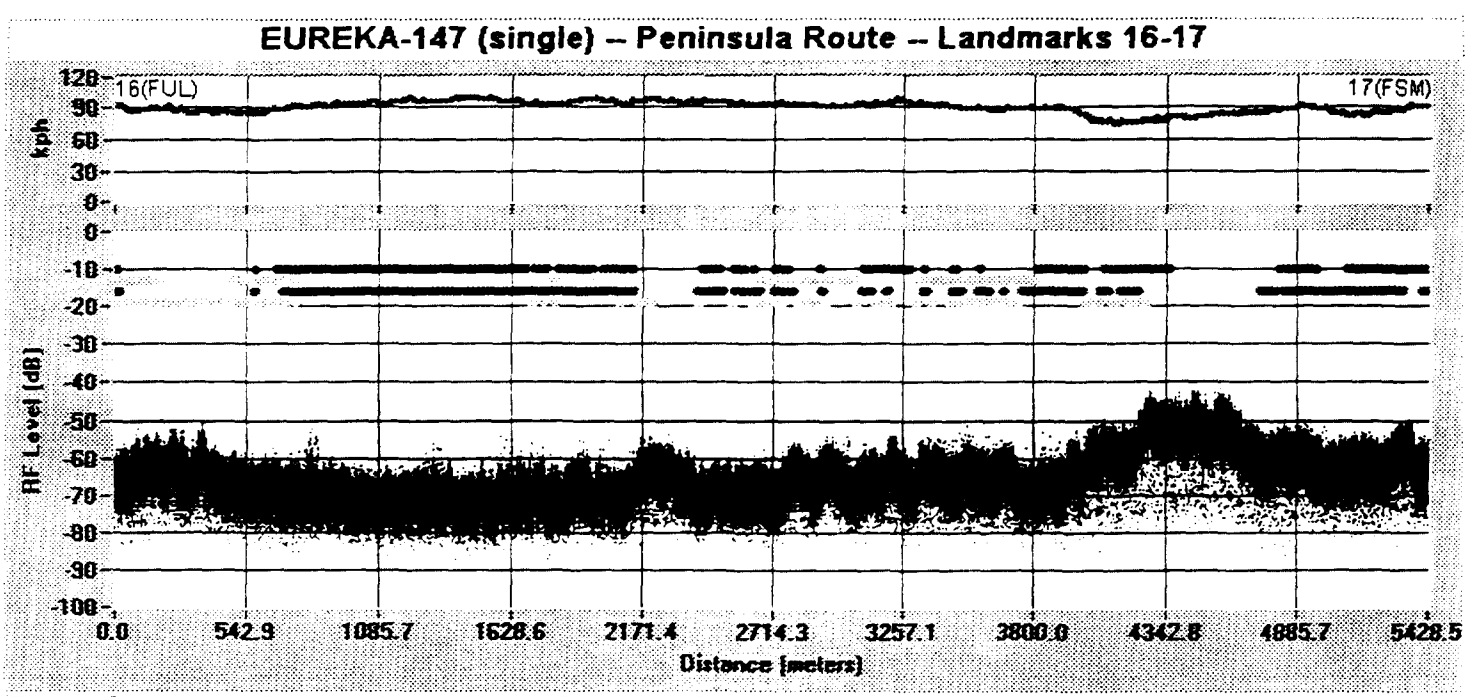
Event Summary: Total 4076; Clear 4035 (99.2%); Impaired 16 (0.4%); Muted 25 (0.6%).

NOTE #2 & #6

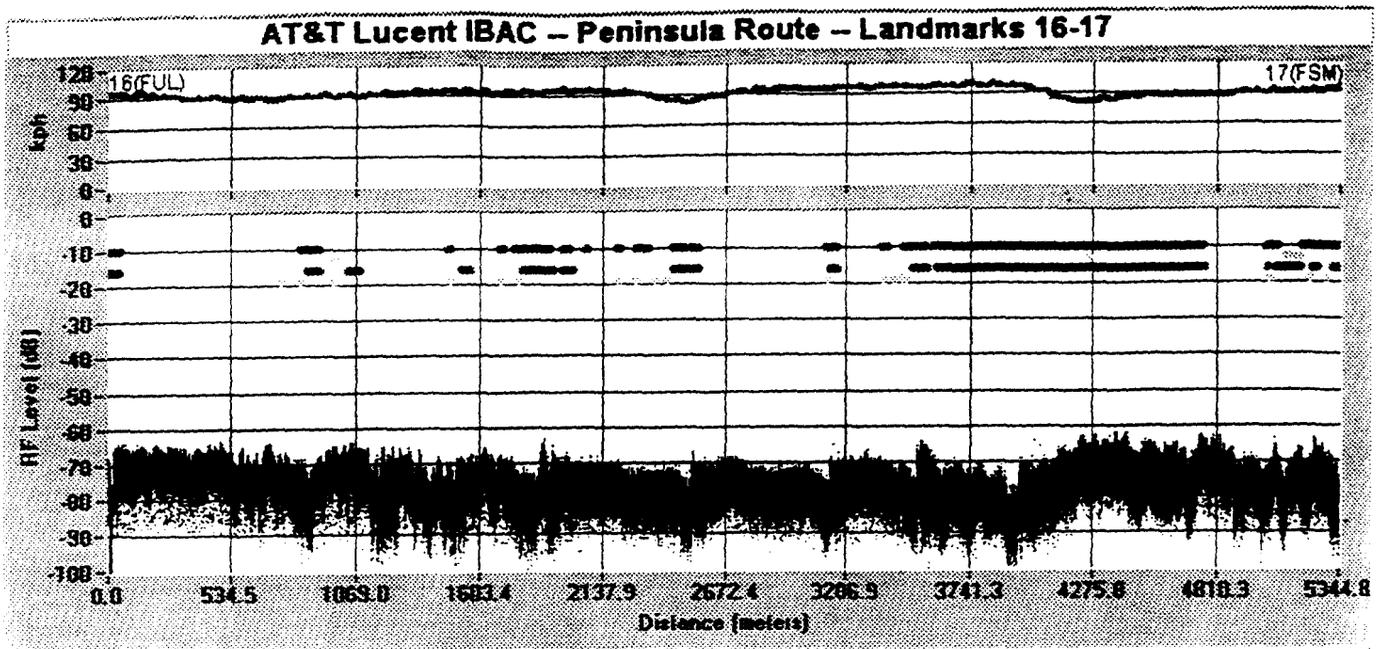


Event Summary: Total 4024; Clear 4024 (100.0%); Impaired 0 (0.0%); Muted 0 (0.0%).

NOTE # 2 & #6

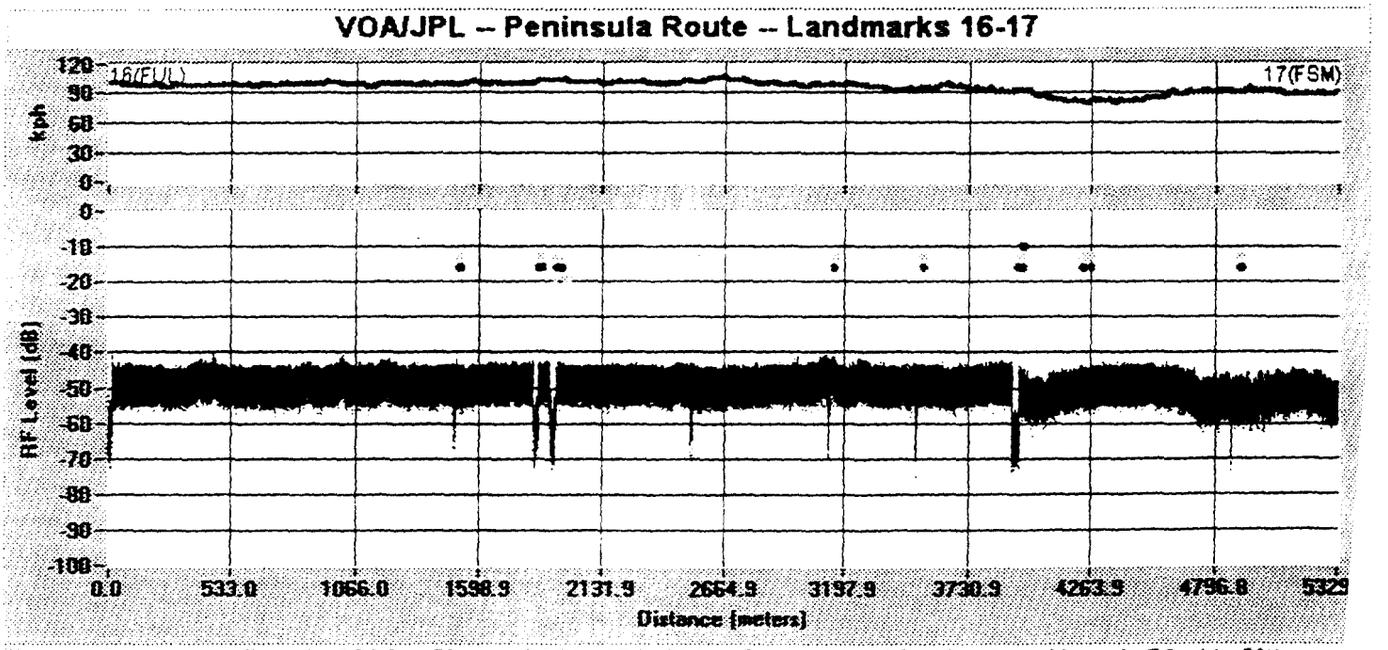


Event Summary: Total 4617; Clear 514 (12.0%); Impaired 1562 (36.3%); Muted 2541



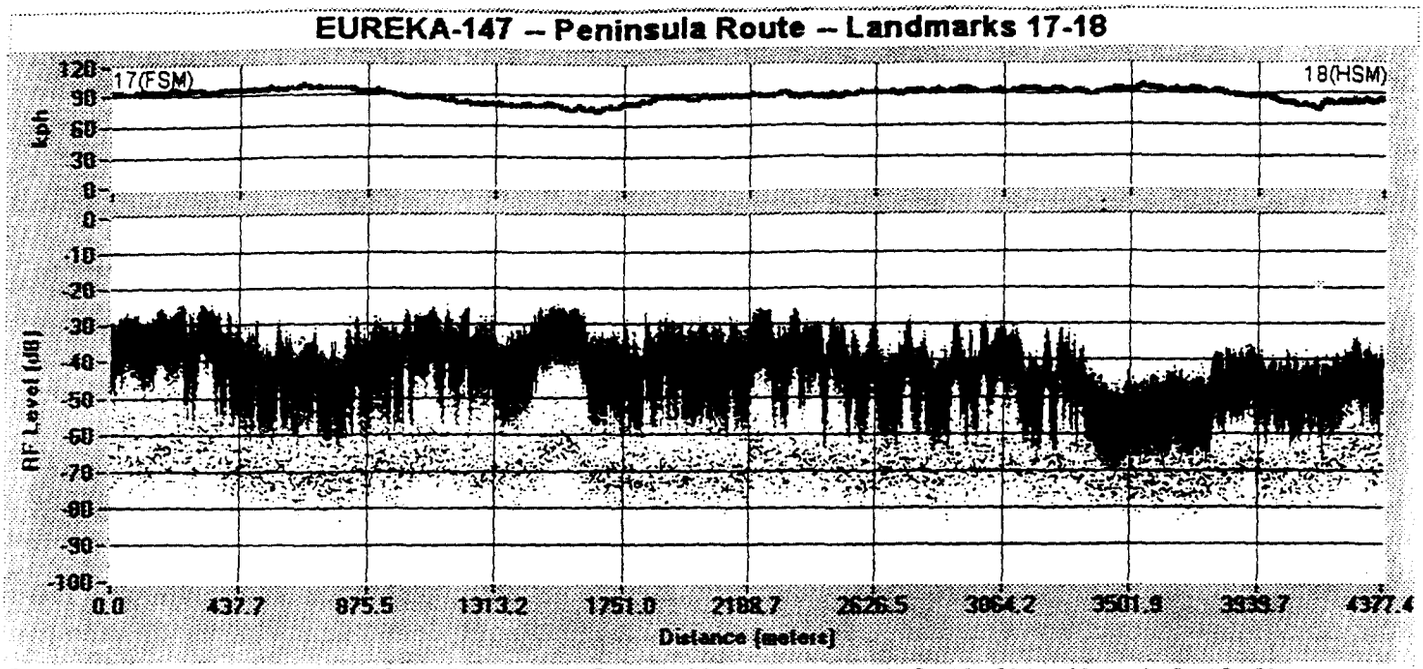
Event Summary: Total 4159; Clear 2266 (55.2%); Impaired 94 (2.3%); Muted 1799 (43.8%).

NOTE #6

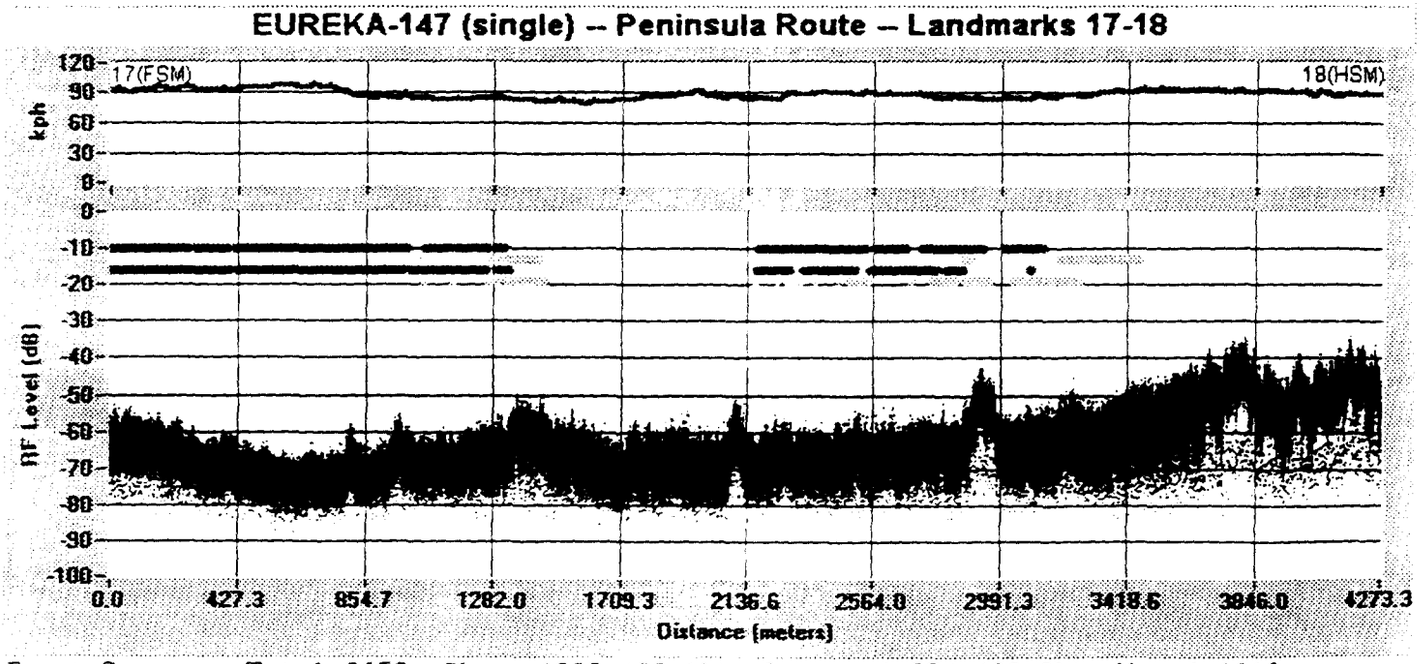


Event Summary: Total 3990; Clear 3831 (96.9%); Impaired 83 (2.1%); Muted 76 (1.9%).

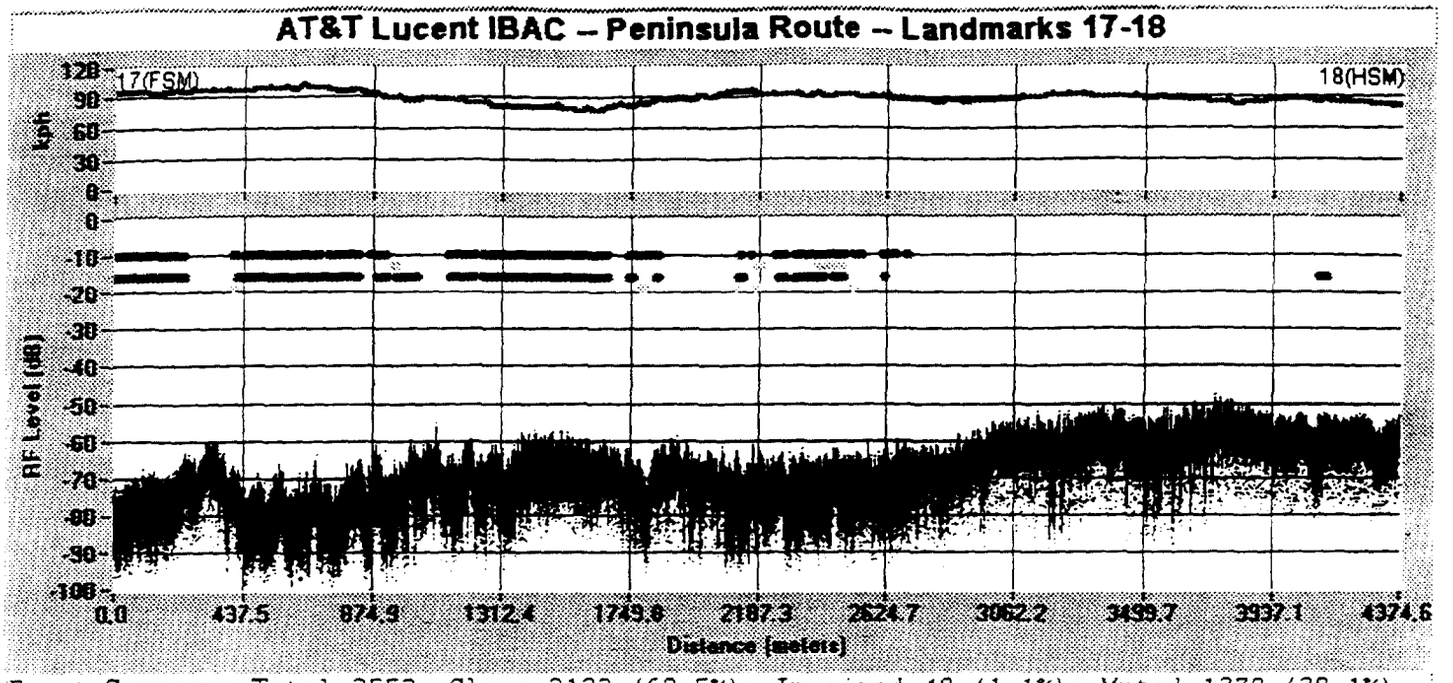
NOTE #6



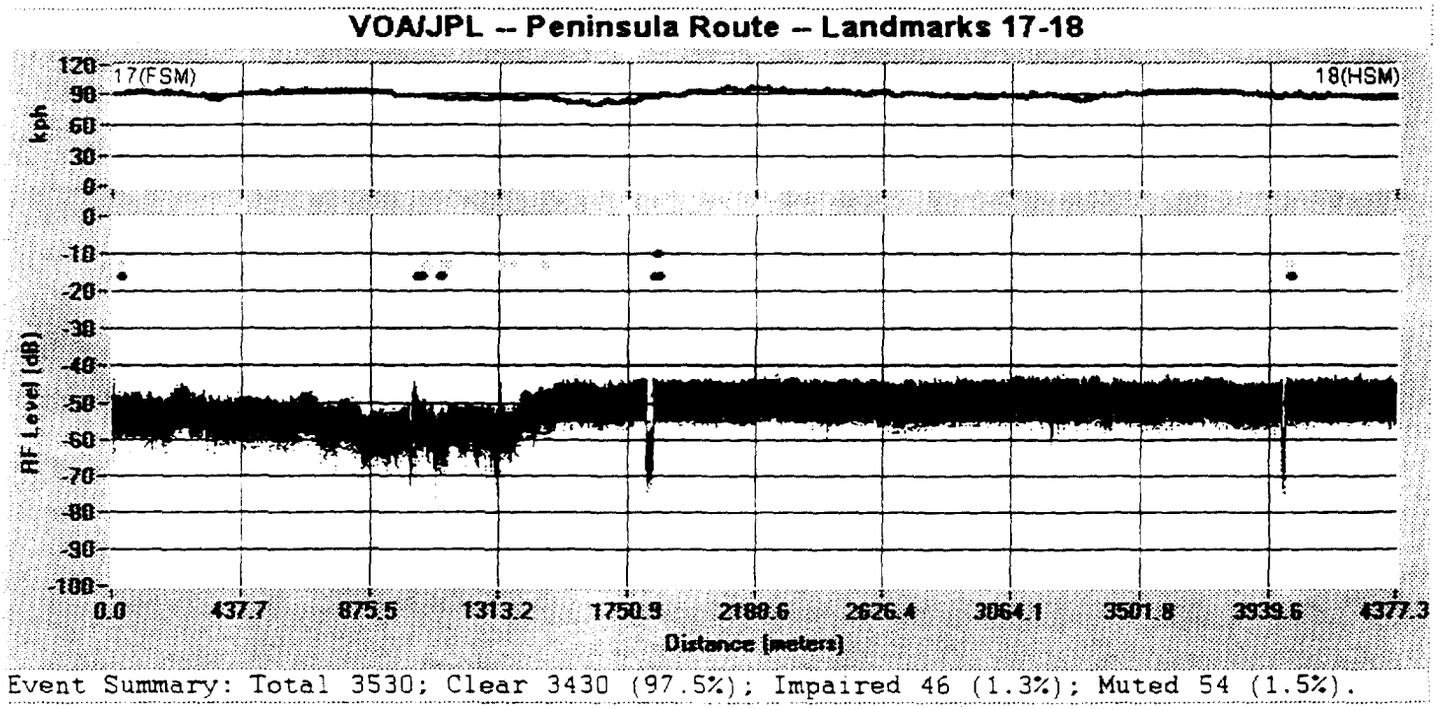
Event Summary: Total 3506; Clear 3497 (99.7%); Impaired 9 (0.3%); Muted 0 (0.0%).



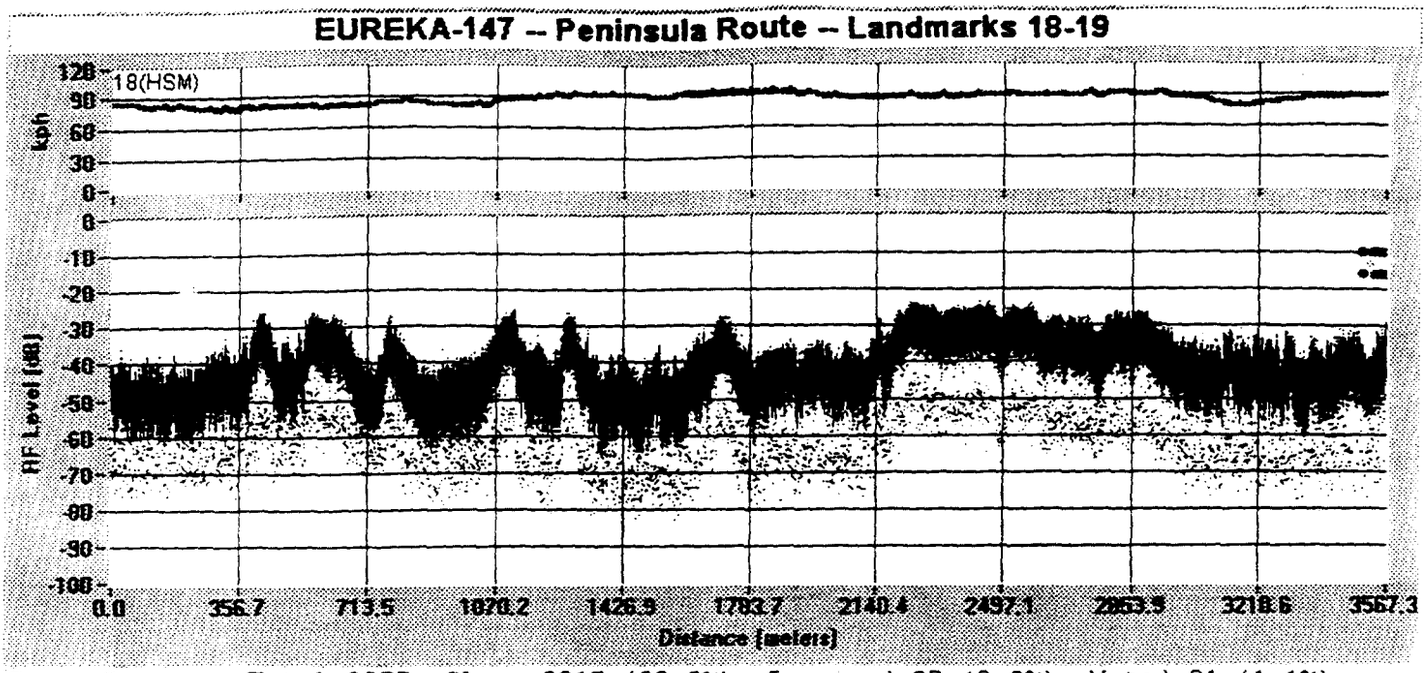
Event Summary: Total 3658; Clear 1288 (38.1%); Impaired 754 (22.3%); Muted 1616



Event Summary: Total 3552; Clear 2133 (60.5%); Impaired 40 (1.1%); Muted 1379 (39.1%).

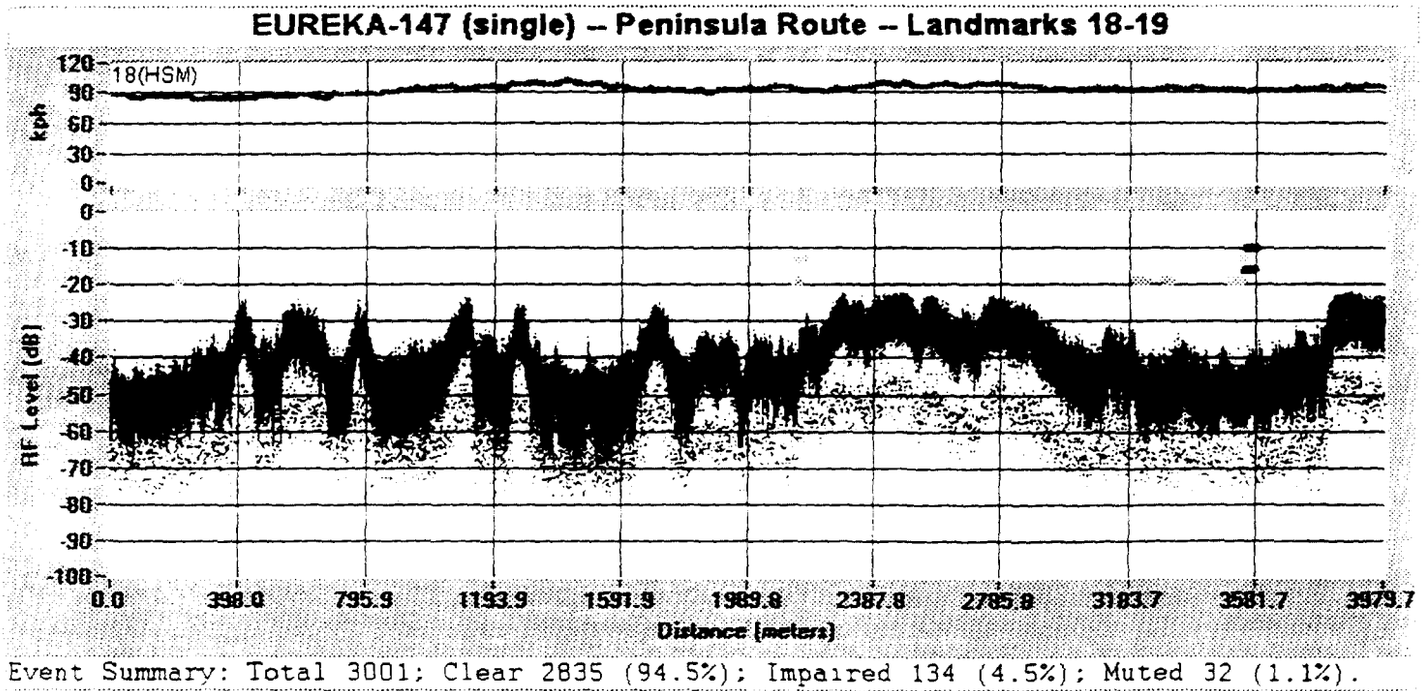


Event Summary: Total 3530; Clear 3430 (97.5%); Impaired 46 (1.3%); Muted 54 (1.5%).



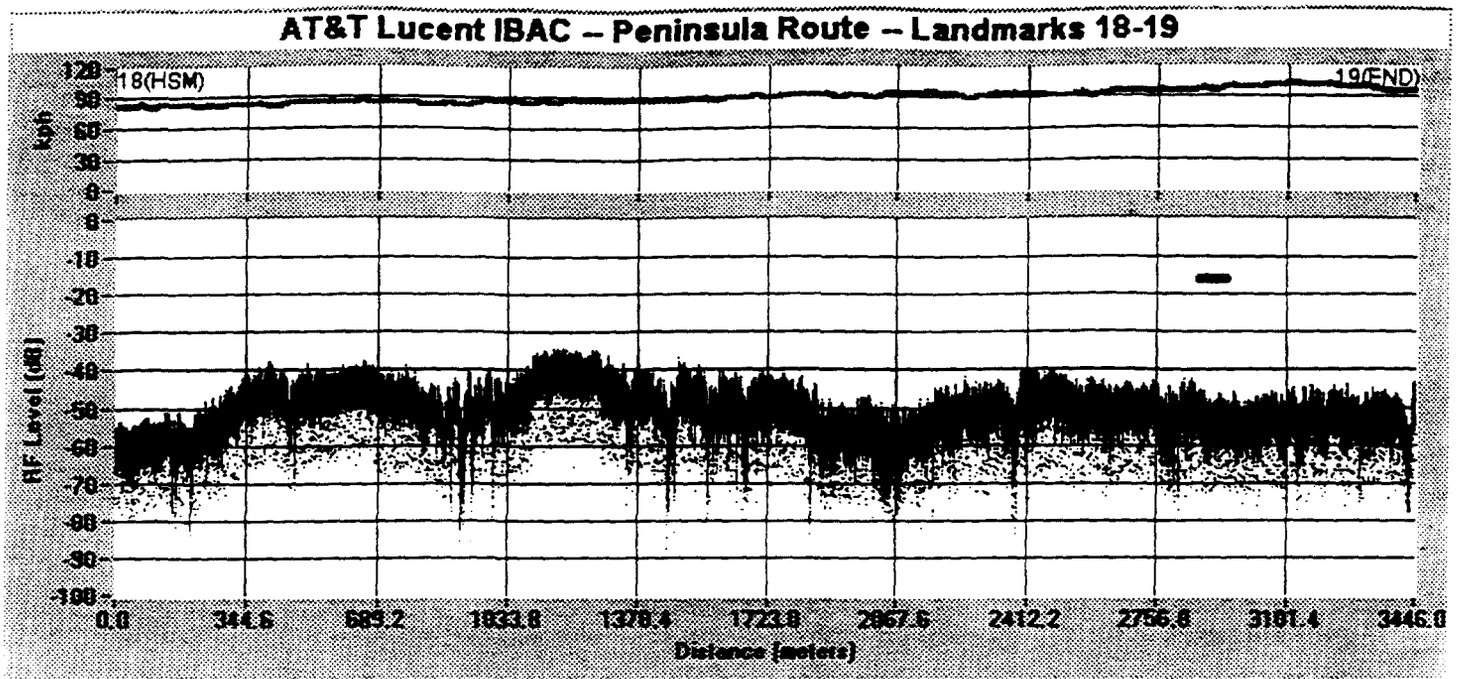
Event Summary: Total 2875; Clear 2817 (98.0%); Impaired 27 (0.9%); Muted 31 (1.1%).

NOTE #2

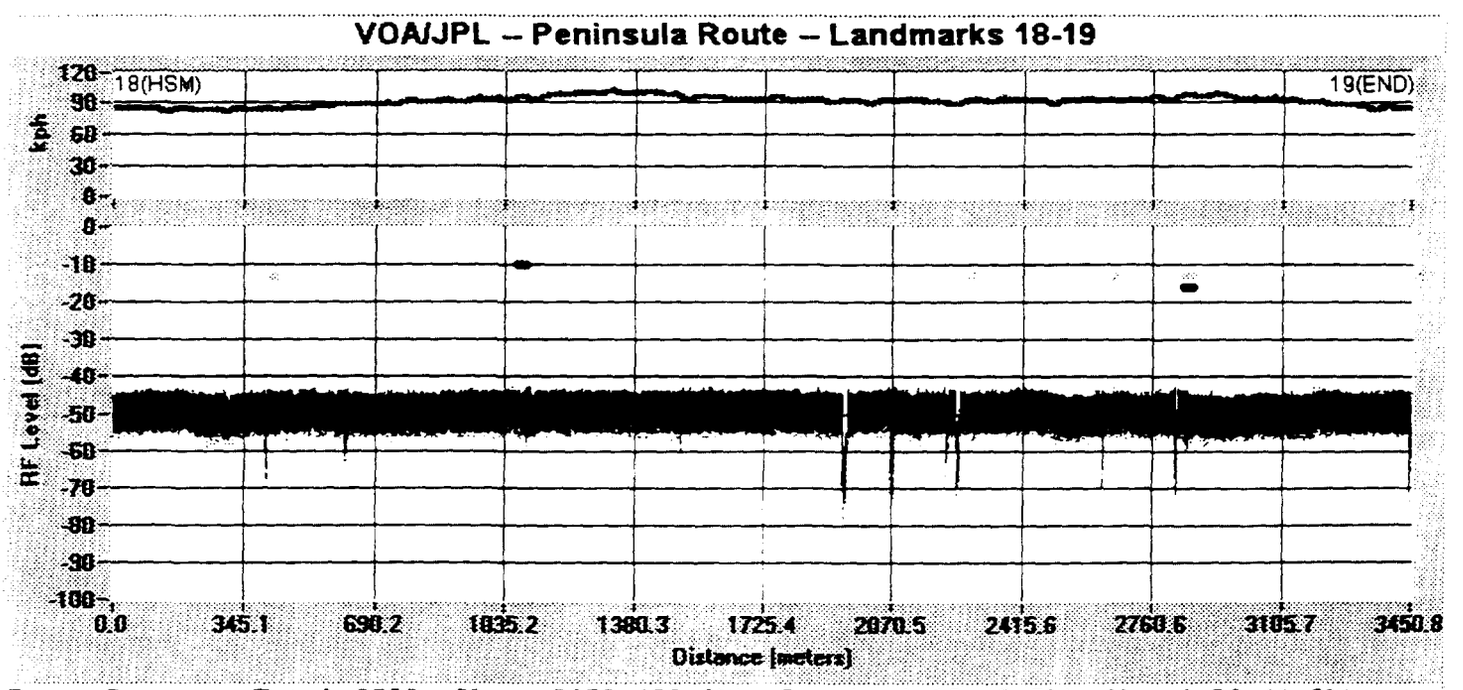


Event Summary: Total 3001; Clear 2835 (94.5%); Impaired 134 (4.5%); Muted 32 (1.1%).

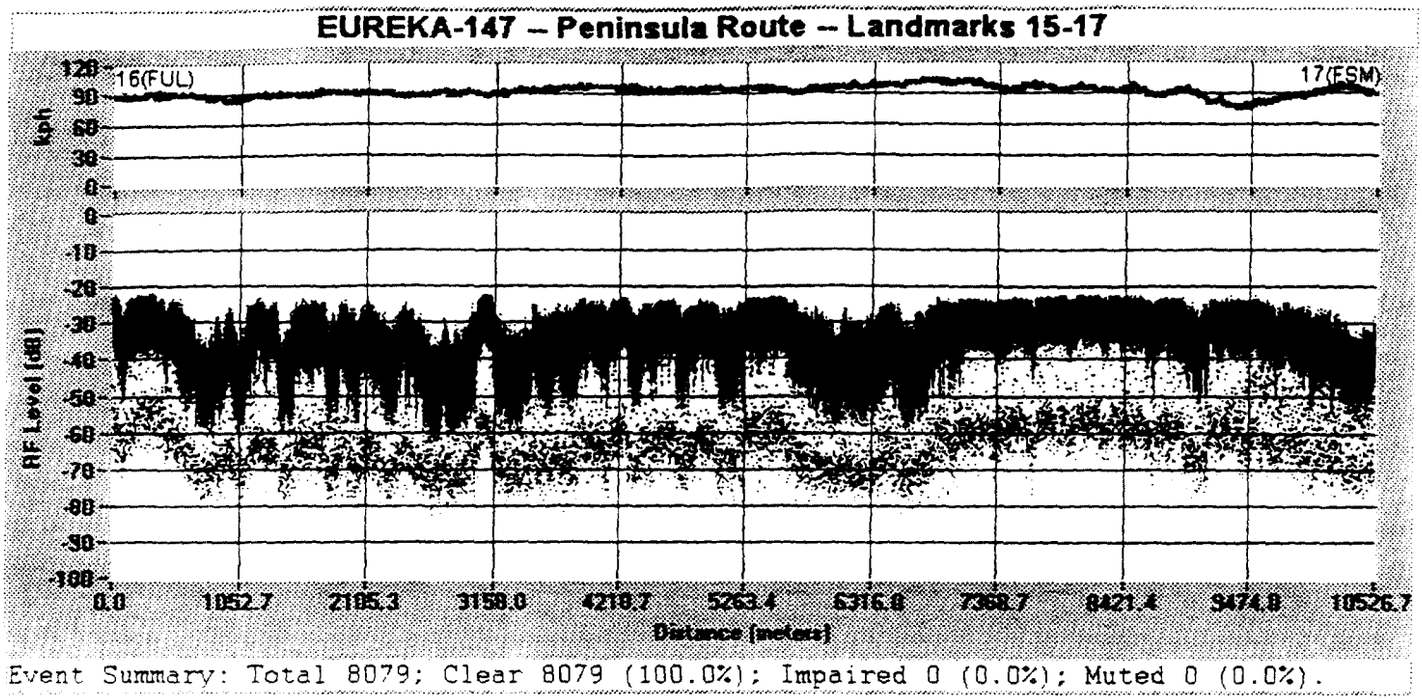
NOTE #2



Event Summary: Total 2767; Clear 2716 (98.2%); Impaired 0 (0.0%); Muted 51 (1.8%).



Event Summary: Total 2702; Clear 2658 (98.6%); Impaired 18 (0.7%); Muted 26 (1.0%).



Event Summary: Total 8079; Clear 8079 (100.0%); Impaired 0 (0.0%); Muted 0 (0.0%).

SUPPLEMENTAL LANDMARK 15-17 GRAPH

INDEX PAGE - APPENDIX A

A-1 EIA-DAR Field Test Plan, rev. 5.0, May 30, 1995; With attached appendices A through D.

A-2 EIA Field Test, Audio Test Segments - Reviewed & Suggested

NOTE: Appendix contents will be supplied on request

WG-4 6/1/95 (4)

DIGITAL AUDIO RADIO FIELD TEST PLAN; METHODS AND PROCEDURES

APPENDIX -3-
rev. 5.0
May 30, 1995

The NRSC DAB Subcommittee - Field Test Task Group has adopted a statement of Objectives and Goals for field testing, a copy of which is attached to this plan as Appendix A. The Methods and Procedures presented here incorporate those basic objectives and goals and are presented below. Each of the outlined areas and items of testing must be considered and refined to yield a suitable test program that fits within the needs of the EIA/NRSC-DAR test program, its time and budget constraints. The following describes the major types of measurements that are anticipated, followed by an outline of the steps by which they would be conducted and the type of test and data extracted.

Field testing may be conducted on those DAR systems tested in the Laboratory and not withdrawn from field testing. The systems include seven (7) proponent systems and one special mode of one of the systems. The seven systems are: IBAC system AT&T; IBOC systems AT&T/AMATI, USADR-1, USADR-2, USADR-AM; Other band system EUREKA-147; Satellite system VOA-JPL. The special mode is the IBAC system of AT&T operating in IBRC (In Band Reserved Channel) mode, replacing the analog transmissions completely. Because of its replacement mode it will be tested for a limited time and only during experimental early morning hours. Each of the systems and modes of operation is described in detail in Appendix B attached to this document, a compilation of system descriptions supplied by the system proponent (where available). Attached as Appendix C are block diagrams of the terrestrial transmission systems.

The general areas and paths over which testing is planned are outlined below. The paths and the Qualitative Characteristics found along each path are described in Appendix D attached to this document.

(L) "Long" path testing will be conducted over a path many kilometers long and taking 30 or more minutes to drive. The path may be open or a closed loop, around an area where a continuous observation of reception is desired. The general path areas will be selected to represent the various propagation conditions in the test area. They will include a variety of terrain, vegetation, construction, etc. and generally must provide a choice of path routes. The areas and resulting paths may be classified as "City", "Suburban", "Rural", "Mountainous", Etc. The individual particular paths must be accessible and suitable for continuous testing and will be selected to expose the systems under test to typical environments and driving conditions in the area. The usable path (lane), speed, pauses and turns will all be as identical as possible for each system under test but will also be determined by the accessible path and traffic conditions at the time and therefore will contain considerable random variations.

For the IBOC hosted systems no special or particular audio test segment can be used on the analog channel. Therefore, when simultaneous audio comparison is desired, only the normal "programming of opportunity" transmitted on the host radio station at the time could be used on the digital channel. Other systems could use this same audio feed. For all systems, when testing only the digital channel, special programming of a "typical" program or "special test" audio segment could be used for testing without direct analog to digital comparison.

Testing will be conducted sequentially among the systems under test with the minimum practical time between systems so as to maintain nearly identical propagation conditions. In the event of rapidly changing conditions, testing may be delayed or repeated on following days to test under similar conditions or attempt to average the results. When all systems have been tested along one path, the next successive path will be tested until all systems have been tested along all paths.

The digital audio received during the Long path tests will be continuously monitored for audio reception "events" which will be marked in the computer log as they are noted by the test crew. The log will reveal where the events occurred and will be an aid in determining where additional testing should be conducted. Two observation decision points will be identified as events. The first is described as the transition between listenable and un-listenable audio and the second is the transition from unlistenable to no audio. Audio samples encompassing these decision points will be demonstrated to the test crew who will then identify the decision point events and use the demonstrations to train themselves in their recognition. This process is further described in following parts of the test plan.

(S) "Short" path tests will be conducted over a path up to several hundred meters long and requiring a 30 to 60 second test at the speed dictated by the "environment" in which it is driven. The environment typical speed may range from a slow 10 to 30 KPH for city center, to 100 KPH for highways. The corresponding path length could range from 100 meters to 1.5 kilometers. The path must be precisely repeatable (same traffic lane) and not subject to any interruptions during a test (no stop signs, heavy traffic, etc.) therefore the paths must be chosen accordingly. The start and stop points will be marked by suitable means; such as noting existing landmarks or using surveying tape or paint. Critical audio segments, selected from the laboratory testing candidate segments, will be recorded and monitored for audio events. The audio transmission must be closely coordinated with the start of a path. A uniform speed, yielding nearly the same location vs. time, should be maintained between runs. Recording a time code and distance event marks along with other data will make checking position with audio events possible. Maintaining the controllable parameters with as little variation as practical leaves only one main test variable, the propagation to the test location. Analysis will therefore report digital system performance verses propagation path.

(P) The "Point" location is really a very short path mobile run. Because of the position variability found in VHF signals, measurements or observations should not be made at stationary locations but must be made over some area (path distance) to arrive at an average value or indication of the signal and its reception. Most likely the short path would be a small circle measured at a very slow velocity of about 1 or 2 meters per second, for a 10 to 50 meter total distance. This measurement serves as a basis for estimating ambient Field Intensity and propagation character in an area, particularly the signal margin above system failure and the presence of multipath propagation. This information will be associated with "Short" and "Inside" measurements.

(I) The "Inside" building tests will be conducted at several locations inside representative building structures including residential, commercial, industrial,

parking garages, etc. Moving all of the DAR receivers under test into a building is not expected to be possible. Therefore, this test requires a remote antenna (with band pass filter and preamplifier) with a hundred meters or more of coaxial line. The remote antenna will be moved in a consistent manner over a limited building path (area). A moderate preamplifier gain and attenuator at the receiver input will be used to overcome the line loss and to swamp out any noise pickup in the line. Design of this item is a critical component of the inside building measurement program.

The various possible modes of testing, parallel and sequential have been discussed in the Field Test Task Group and a sequential mode has been selected. Each of the systems will be tested sequentially at each test site. For the Long paths, the one hour plus test time will limit testing to one path per day, possibly longer. For the Short paths, with the seven systems and several audio segments and related tests, it is anticipated that one or more sites can be completed in a day. Following is the test program outline.

I. CALIBRATION AND FIELD TEST SYSTEM VERIFICATION

A. DAILY
1. CHECK TRANSMITTER SITE AND TRUCK SUPPORT SYSTEMS (FUEL, POWER, HVAC, ETC.).
2. TEST DAR SYSTEMS; MAKE SPECTRAL PLOTS WITH AN OPEN AND/OR CLOSED LOOP (TX OUT / RX IN) CONNECTION.
3. TEST OPEN LOOP SYSTEM POF'S AND/OR TOA'S (AT "DAILY SETUP"
4. TEST THE DATA AND AUDIO COLLECTION SYSTEMS USING A STANDARD "TEST" AUDIO AND DATA FILE.
5. TEST COMPUTER CONTROL SYSTEMS USING TEST FILE.
6. TEST TRUCK TO TRANSMITTER 2-WAY COMMUNICATIONS.

B. WEEKLY
1. TEST BED CLOSED AND OPEN LOOP PARTIAL PROOF
2. CHECK CRITICAL CALIBRATIONS

C. START AND END OF PROJECT
1. FULL TEST SYSTEM CALIBRATION / POST PROJECT CHECK

II. FIELD TESTING DAR SYSTEM AUDIO CHARACTERISTICS, QUALITY, COVERAGE AND ANCILLARY DATA

A. DAILY CHECK AT TRANSMITTER AND/OR FIELD "SETUP SPOT"; The received audio quality and data channel for all systems will be observed with the test vehicle at the transmitter and/or a common daily check site / setup spot. The transmitter power and/or receiver input level will be measured and suitable tests will be conducted to confirm the following;
1. Digital R.F. signal level
2. Relative analog/digital signal ratio (where appropriate)
3. Analog modulation levels (where appropriate)
4. System TOA and/or POF as a check on proper system operation

The "Daily" checks will be designed to be sufficient to spot any trend toward improper operation of the equipment under test or the test bed. The daily checks must also be practical, taking a short time to complete at an easily accessible location. The use of a field "Setup Spot", remote from the transmitter site is suggested.

B. FIELD PROCEDURE; each DAR system will be tested sequentially at each test point using the following general procedure.

1. MEASUREMENT LOCATION SELECTION; Choose and document a well defined, easily accessible path and location at which to begin both Long path observations, limited Short runs and "Point" location runs. Buildings for "Inside" measurements should be chosen near Long path critical areas and the resulting Short path locations if possible. This will maximize the amount of "ambient" system performance data for comparison with the resulting "Inside" performance. Paths should be scouted to determine the conditions to be encountered and the proper procedure to accommodate them. Excessive disruptions should be avoided. A navigator will maintain the necessary path description to guide the driver and act as observer to spot landmarks and potential hazards.

   a. LONG PATH; The choice of the "General" area or description of the type of area to be considered for the long and short paths has been made in advance by the Field Test Task Group. The basis is the general knowledge of the area, type of locations to be sought and by area inspections prior to actual testing. Six long paths have been selected by the Field Test Task Group to include a variety of propagation Qualitative Characteristics. The precise route that will be driven along each path will be subject to traffic and driving conditions found at the start and during testing. Modifications to the route will be made by the test crew as necessary so as to accommodate unforseen conditions but also to remain within the general route chosen by the Field Test Task Group.

   b. SHORT, POINT AND INSIDE MEASUREMENT LOCATION; The experience during the longer loop path observations is expected to indicate areas or actual locations in which to conduct other measurements. Each location will be determined by desirable character, accessibility, safety and the ability to conduct the test within the adopted procedures. The test crew will document the location or path, description of surrounding area, time, date, weather, precise travel path, start-stop points, velocity, etc. For short paths, since several passes may be necessary when determining signal level margins, paths should be chosen that allow easy forward motion, looping back to the start point in a small circle; do not back-up for efficiency and safety reasons in crowded areas.

2. SET-UP AT MEASURING LOCATION; Conduct the pre-measurement documentation (described above). Setup the measurement system for a particular session including general setup; data collection files and procedure.

etc. and system specific setup. Check the equipment under test for proper operation.

3. DETERMINE SIGNAL LEVEL AND MARGIN; At a Point near the start of a short or Inside path, conduct a "Point" measurement to determine the approximate DAR system operating threshold level. The operating threshold will be determined by reducing input signal level and/or injecting R.F. noise to the point of system failure by muting, while driving the Point small mobile continuous loop path. This level, when compared to an unaltered signal, indicates the approximate signal margin at that location.

4. PREPARE TO MEASURE; Return the signal level and injected noise to their starting conditions (maximum signal and no noise) and prepare for Long, Short or Inside path measurements. Data collected in each run will include;

   a. R.F. SIGNAL; Measure the analog AM/FM/L-Band/S-Band R.F. voltage (F.I.) simultaneously with DAR signal reception by computer automated method. Measurements are anticipated to use a tuned RF meter or spectrum analyzer with samples taken at frequent distance intervals (approximately 1/10 wavelength, shorter or longer as frequency and variations dictate) along a path. The R.F. signal measurements will be processed and displayed as follows;

      (1) Continuous Long path measurements will be analyzed to yield statistics in segment lengths relevant to the paths. The analysis will report the R.F. signal maximum, minimum, median and deviation values, over the length of analysis chosen.

      (2) Continuous Short path measurements will be similarly analyzed over their entire length if sufficiently short or several lengths if necessary.

      (3) Spot measurements will be analyzed over a short length representing several circuits around the "spot" movement loop. The R.F. signal strength values returned from that will be used as the basis against which to gauge the "margin" of signal above point of failure (threshold of muting) for a system at locations where Short of Inside measurements are made.

   b. DISTANCE; Measure the distance along the path using the trigger and software from Delco (if available) or similar "5th. wheel" device. The F.I. data will be processed to return point-by-point fast signal fading data. A sliding window of adjustable length (number of sample points) along the path will be used to calculate and display the "slow" fading signal along a path. The F.I. will be computer processed and displayed (while the test is in progress if possible) to aid in identifying and differentiating between multipath frequency selective fades (fast) and obstruction or attenuation fades (slow).

c. LOCATION; Determine and store on the computer the geographic coordinates at significant landmarks, street intersections and path turns. Prepare a script of landmarks for the path, including the start and stop points and several intermediate points, and record these in the computer and mark the passage of each as an event mark in the computer data log.

d. R.F. SPECTRUM; Record the R.F. spectrum by either or both of two methods; by frequent snap-shots stored on the computer and/or by a continuous video tape recording of the spectrum analyzer display along a path. The snap shot interval should be set to approximately every few seconds on the short mobile runs to yield several snapshots, and every minute or so on the long loop paths generating 30 to 60 displays per long run. The spectrum analyzer parameters should be set to display any signal within a few percent of the frequency under test and within 20 dB of the average range of the signal under test.

e. RECORD DIGITAL & ANALOG AUDIO; Record the test Audio segments for each run, including both the analog and digital audio, on DAT. The audio for testing the digital IBOC systems on the long runs will be the audio of opportunity (the actual host station programming). For non-IBOC systems the test audio could be continuous "typical" audio, audio of opportunity and special critical audio samples (2 to 4 segments as used in the lab testing) as appropriate. Simultaneous analog channel audio will also be recorded. For IBOC tests this will be the host station audio. For non-IBOC tests the analog audio could be different than the digital audio and could be the IBOC host audio of opportunity without any digital transmission at the time. This becomes the baseline analog audio reference. A time delay circuit will be used in the analog audio channel at the transmitter to compensate for the digital transmission system audio delay with a second time delay used with the analog receiver to compensate for the digital receiver time delay. This technique will roughly align the transmission and propagation of the same audio segment and then align the audio recording for comparison. The recorded audio will be available for post measurement analysis.

f. RECEPTION OBSERVATIONS - DECISION POINT "EVENTS"; Conduct a continuous monitoring of the digital audio characteristics and mark decision points in the computer file. The two decision point "events" are defined as the transition from "listenable" to "unlistenable" audio and the transition from "unlistenable" to no audio, the onset of muted audio. This observation will be conducted by the test crew members in the van who will listen to the digital audio channel on headphones and mark the computer event file as a path is driven. The crew will be trained in advance to identify and properly mark the audio decisions points. From this training and marking the crew will define by example the agreed uniform thresholds and provide

examples and a written definition of both. The digital audio characteristic events will be tallied by pressing and holding an appropriate button as long as the event is taking place, with the result that the computer records the marks verses time and distance along a path traveled. The areas along a path with a concentration of event marks will then be candidates for more detailed observations.

g. ANCILLARY DATA CHANNEL; Receive and decode the ancillary data file and compare it bit-by-bit to the digital reference file in the computer. Tally the bit errors and calculate the bit error data rate vs. time (distance). Display the real time values if possible. Format and record the results in the computer file for each run.

h. MAIN CHANNEL OPERATION; Observe the Equipment Under Test for main channel operating indicators or "Stress" flags as provided by the proponent <u>if possible</u>. Such indicators will be voluntarily provided by the system proponent and recorded and reported if the proponent so requests. Otherwise, they will be observed and recorded only for calibration and test purposes, but not generally included in the test report. Recording will be automatically made in the computer file for each run. This information will be used to check proper system operation and for later analysis relative to system performance.

i. NAVIGATION LANDMARKS; Log the manual path landmarks chosen by van crew in the computer file (start, stop and intermediate point descriptions, etc). Mark the event of crossing major land marks on longer runs by pressing an event mark button for the computer file.

j. UNUSUAL FINDINGS: Log any unusual results and extra investigation undertaken.

k. VIDEO RECORDING - PATH AND EQUIPMENT; Record the video output of a fixed forward facing camera with a wide angle lens to show the general area of the path. The audio channel of the video recorder will contain voice input from a "cockpit" microphone to record land marks or other comments spoken along a path. The video recorder will also contain time code information which will be duplicated in the computer file and on the DAT recorders so that data can be synchronized. Other video recordings will also be made as necessary, for example from a video output of an R.F. spectrum analyzer.

5. <u>REPEAT</u> steps 3 and 4 for the next audio segments [1 to 3 repeats]

6. <u>REPEAT</u> steps 3 and 4 for next DAR system [7+1 proponent systems]

NOTE; It is estimated that after the crew becomes familiar and efficient with the procedures, 2 or 3 "Short" path or "Inside" locations can be measured per day; 15+ locations per week (6 plus days); 65+ locations per month.

C. END OF LOCATION PROCEDURE

1. IMMEDIATE "AS COLLECTED" PROCESSING (SEE DETAILS IN SEC. V.A.); Conduct real time or immediate post measurement processing and display the results to confirm location character, quality of data and assist in notes to describe the location.

2. MANUAL NOTES; Finish recording the location documentation and measurement notes in computer log; start/stop time, weather conditions, point identification - file record No., DAT index No., Video tape No. and index, unusual conditions and investigation, etc.

3. BACK-UP DATA; Transfer computer data to backup tape or floppy disc.

4. AUDIO RECORDINGS; As appropriate; remove, record disable and label DAT. Pre-label, enable and insert new DAT. (this may involve marking segments of one DAT used for an extended period, ie. one day)

5. PREPARE FOR ROAD; Prepare van for road travel to next point; secure equipment and personnel, etc.

III. DAR IN BUILDING MEASUREMENTS (same setup and field procedures as above except;)

A. PREPARE REMOTE ANTENNA AND CABLE FOR USE,
1. Test remote amplifier/cable by closed loop measurement at start and end of each location measurements. Log the total cable attenuation and amplifier gain. Note and repair any intermittent or significant gain change. Log "repairs".

B. AMBIENT R.F. CONDITIONS; Document reception conditions outside of building by "fixed" short path circle DAR system quality tests.
1. Establish R.F. signal strength and system margin above failure.
2. Document multipath environment and rating.

C. SELECT INSIDE PATH; Layout and document inside path and building parameters (typical 2 locations per building)
1. Building type, size, layout, location, etc.
2. Construction methods and materials
3. Floor(s) measured
4. Path length and % displacement relative to building center and walls, draw a rough floor plan and path.
5. Film and narrate a short video tape segment; inside along the proposed path(s) and outside around the building, preferably from the "fixed" measurement perspective, to display its type and surroundings. This may be accomplished by video taping a slow walk along the path and loop around the fixed point while narrating the tape, particularly with location comments.

D. MEASURE; Move the remote antenna along a path and record data.

1. Position antenna on standard "carrier".
2. Coordinate recording and audio sample transmission with van via. radio or cable intercom.
3. Move the carrier and antenna along a path while marking distance by marking paces, wheel counter, wheel clicker with audio recording, etc.

E. END OF MEASUREMENT LOCATION PROCEDURES (same as II. C.)

IV. END OF DAY PROCEDURES

A. FOLLOW-UP CALIBRATION CHECKS
B. COPY DATA TO SECOND BACKUP FLOPPY DISCS OR TAPE
C. CATALOG THE AUDIO SAMPLES AND COPY TO BACKUP DAT (UNLESS SECOND DAT IS RECORDED SIMULTANEOUSLY DURING MEASUREMENTS)
D. CATALOG THE VIDEO TAPE, REMOVE, RECORD DISABLE, AND LABEL FOR THAT DAY; PREPARE A NEW TAPE FOR NEXT DAY (TAPE MAY SPAN MORE THAN ONE DAY BUT SHOULD BE COPIED TO BACKUP DAILY!)
E. CLOSE THE WRITTEN LOG
F. SECURE EQUIPMENT AND VAN FOR STORAGE

V. PRELIMINARY DATA PROCESSING

A. IMMEDIATE "AS COLLECTED" PROCESSING
   1. Analog AM, FM, L-Band and S-Band R.F. signal F.I. data
      a. Automatic collection of data made at constant distance steps.
      b. Calculate maximum, minimum, median and S.D. values of F.I. within an appropriate test distance along a run (all of the shortest short runs and short segments of a long run). The values will be calculated by averaging over a constant (but variable) distance sliding window. A short length (1 step, 0.3 meter or 1/10 wavelength) window will show multipath fast fades and enable an estimate of the multipath severity or "rating" of a path segment. The rating would reflect multipath characteristics such as the depth and repetition of fades and establish rough descriptions such as slight, moderate and severe multipath. A longer 3 to 30 meter (10 to 100 step, 1 to 10 wavelength) window will show propagation blockage and long term "slow" fades, those not due to fast multipath fading.
      c. Store data in computer file
      d. Generate computer video display of instantaneous short and long window F.I. Vs. distance. Crew evaluation of the instantaneous R.F. graph Vs. path distance will reveal the multipath character of the path and result in a "multipath rating" of the path to add to computer log. The multipath "rating" used in this reporting will be formulated by the test crew based on in field training observations. A written description of the multipath conditions and the "rating" will also be supplied by the crew.

2. Digital auxiliary data file BER
   a. Decode auxiliary data channel and pass data to computer
   b. Compare data as received to the fixed known data file and calculate data rate, bit error count, BER and other characteristics (maximum error length, etc.).

3. Other data; Generate computer displays and composites of as many of the other parameters as possible to assist in classifying the measurement, the location and the selection of other measurement spots.

B. END OF RUN PROCESSING
1. Identify and label all computer processed raw data, attach notes as needed.
2. Log any unusual findings and investigations.
3. Complete and close computer "notes" file; assign a label and apply to DAT and computer file id., log characteristic evaluation notes, identify start/stop date-time, identify location descriptions, path, landmarks, weather, etc.
4. Confirm computer automatic transfer of all files to hard disc and backup floppy and tape.
5. Review parts of video log to check quality and correct operation of the logging system. Set tape position with 5 second black picture to begin next segment.

C. END OF DAY PROCESSING
1. Transfer all DAT recordings to daily backup DAT tape and move off site (option is to run parallel DAT's).
2. Transfer all computer data files to daily backup tape or floppy and move off site.
3. Process the days work to view "results". Use a series of graphical and tabular presentations to look for anomalous or unusual results, watch for equipment problems and plan for further tests. Check the r.f. signal level recordings, the data bit error data, the characteristic event marker files etc.

VI. POST PROCESSING (OFF SITE PROCESSING)

A. Digital Audio quality analysis will rank performance for comparison to other parameters such as; analog audio quality, signal level, multipath "rating", bit error file, characteristic event file, etc.
B. Compile analog F.I. vs. location, terrain, foliage, etc.
C. Compile "reception observation" comments vs. test environment and other parameters (F.I., etc.)

VII. DISTRIBUTION OF RAW (POST PROCESSED) DATA;
A. Distribute to others by a procedure and at dates T.B.D.

VIII. REPORT GENERATION;
A. Field test group to prepare test reports for distribution to EIA and NRSC. Format and distribution T.B.D.

APPENDICES TO DAR FIELD TEST PLAN

APPENDIX A. DAB SUBCOMMITTEE - FIELD TEST TASK GROUP
Objectives and Goals (1 page, undated)

TRANSMIT & RECEPTION

APPENDIX B. DAR SYSTEM DESCRIPTIONS - Provided by proponents
(to be provided by proponents)

APPENDIX C. BLOCK DIAGRAMS - TRANSMISSION AND MOBILE RECEIVE SYSTEM

APPENDIX D. EIA - NRSC DAB Subcommittee - Field Test Task Group (May 18, 1995)
"Long Path" Test Routes (10 pages; Figures 1A, 1B, 2A-F, 3A & 3B.

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DAB SUBCOMMITTEE - FIELD TEST TASK GROUP
Objectives and Goals

The Field Test Task Group of the NRSC's DAB Subcommittee is charged with developing and conducting field tests of all proposed digital broadcasting systems under consideration by either the NRSC DAB Subcommittee or the EIA DAR Subcommittee. These field tests are intended to provide both the NRSC DAB Subcommittee and the EIA DAR Subcommittee with the information they will need to determine which, if any, of the systems under test should be recommended as a standard for the United States

TASK GROUP OBJECTIVES

(a) To determine if the systems under test provide users with a signal quality and durability that is significantly greater than the AM and FM analog systems that presently exist in the United States.

(b) To provide broadcasters and receiver manufacturers with the information they need to make an informed decision on the future of digital audio broadcasting in the United States.

TASK GROUP GOALS

To meet its objectives, the task group will work towards achieving the following goals:

(a) To provide a direct comparison between the systems under test and existing audio broadcasting and, where applicable, between the systems under test and the host analog signal, over a wide variation of terrain and under all adverse conditions that could be expected to be found throughout the United States.

(b) To develop a testing process and measurement criteria that will be conclusive, believable and acceptable to all segments of the industry.

(c) To develop field testing that, when coupled with the results of laboratory tests, will provide a complete picture of the magnitude of improvement that each tested system can be expected to offer over existing broadcast systems.

(d) To perform its field tests, and reach a conclusion concerning its objectives, as early and economically as reasonably and practically possible.

APPENDIX A